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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,721	11/14/2001	Mao Chen	08CS05932	5320

7590 03/08/2004  
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EXAMINER

BERMAN, SUSAN W

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 03/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/990,721

Applicant(s)

CHEN ET AL.

Examiner

Susan W Berman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-17 and 19-32 is/are pending in the application.
- 4a) Of the above claim(s) 23-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-17,19-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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***Specification***

The new title of the invention is considered to be descriptive of the invention and has been entered.

***Response to Amendment***

The rejection of claims 1-22 under 35 U.S.C. 102(b) as being anticipated by Tamaya et al (5,494,645) is withdrawn. Tamaya et al do not disclose compositions as instantly claimed comprising a (meth)acrylated polyurethane oligomer and hexanediol diacrylate.

The rejection of claims 1-22 under 35 U.S.C. 102(b) as being anticipated by Tamura et al (5,635,544) is withdrawn in order to simplify the issues. Tamura et al disclose compositions comprising the instantly recited components wherein the oligomer is an acrylated isocyanurate or acrylated urethane. A mixture of three acrylated isocyanurate or acrylated urethane monomers with 1,6-hexanediol diacrylate or 1,9-nonanediol diacrylate is taught for obtaining toughness, adhesion to the substrate, weather resistance and durability (column 6, lines 43-54). See examples 9 and 10.

The rejection of claims 1-22 under 35 U.S.C. 102(b) as being anticipated by Patel (5,811,472) is withdrawn also to simplify the issues. Patel discloses radiation curable compositions comprising components corresponding to the instantly claimed components wherein the oligomer can be a urethane acrylate and the monomer can be hexanediol diacrylate.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1, 3-17 and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Katsamberis (5,426,131). Katsamberis discloses compositions comprising the instantly recited components wherein the oligomer is a urethane acrylate oligomer used in amounts from 5 to 40 wt. percent. See the Abstract, column 5, lines 31-44, column 8, line 57, to column 9, line 25, column 10, lines 32-43. The weight percents of the components disclosed by Katsamberis overlap those set forth in the instant claims. Therefore, with respect to claims 3-22, Katsamberis discloses the instantly claimed compositions wherein the wt percents correspond to those set forth in the instant claims. The instantly claimed compositions are considered to be anticipated because hexanediol diacrylate is employed with a difunctional aliphatic acrylated urethane and acrylate functionalized colloidal silica in Examples 1 and 2 (column 10, lines 32-43). Furthermore, Examples 1 and 2 do not exhibit microcracks. Since Katsamberis discloses compositions comprising the same components as set forth in the instant claims in amounts within the instantly claimed parts by weight ranges, the properties of a film of the cured composition set forth in the instant claims would be expected to be inherent to films of the cured compositions disclosed by Katsamberis.

Claims 1, 3-17 and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Patel (5,990,188). Patel discloses radiation curable compositions comprising components corresponding to the instantly claimed components wherein the oligomer is a urethane acrylate or polyester acrylate. See the Abstract, column 4, line 58, to column 5, line 10, column 6, lines 51-58. The weight percents of the components disclosed by Patel overlap those set forth in the instant claims. Therefore, with respect to claims 3-17 and 19-22, Patel discloses the instantly claimed compositions wherein the wt percents correspond to those set forth in the instant claims. See Examples A-F comprising polyurethane hexaacrylate, silyl acrylate modified colloidal silica in hexanediol diacrylate and the properties reported in Table 2.

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Claims 1, 3-17 and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 97/11129. US 6,306,502 is relied upon for translation of WO '129. See column 3, lines 10-61, column 4, line 3m to column 5, line 6, column 7, line 31, to column 8, line 25, column 9, line 38, to column 10, line 66, column 11, lines 58-65. The weight percents of the components disclosed by WO '129 overlap those set forth in the instant claims. Therefore, with respect to claims 3-22, WO '129 discloses the instantly claimed compositions wherein the wt percents correspond to those set forth in the instant claims.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-17 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al (5,712,325). Lewis et al disclose compositions comprising a dispersion of colloidal silica treated with an alkoxysilylacrylate and mixed with an acrylate-functional monomer. Hexanediol diacrylate is used in the examples. See column 2, lines 33-48, and column 5, lines 14-44. Acrylate oligomers, such as hexafunctional polyurethane acrylate or silicone acrylate oligomer are taught in column 4, lines 14-52.

It would have been obvious to one skilled in the art at the time of the invention to include an acrylate oligomer such as hexafunctional polyurethane acrylate in the disclosed compositions, as taught by Lewis et al. One of ordinary skill in the art at the time of the invention would have been motivated by a reasonable expectation of success because Lewis et al teach adding oligomeric acrylates. It would have been obvious to one skilled in the art at the time of the invention to determine the optimum weight percents of components following the teachings of Lewis et al. One of ordinary skill in the art at the time

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of the invention would have been motivated by a desire to optimize the properties sought in the instant application.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W Berman whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Susan W Berman  
Primary Examiner  
Art Unit 1711

SB  
March 1, 2004